

ABSTRACT OF THE DISCLOSURE

Disclosed herein are methods and associated compositions and medicaments directed generally to the control of cellular and neural activity and for selectively and controllably inducing the *in vivo* genetic expression of one or more naturally occurring genetically encoded molecules in mammals. More particularly, the present invention selectively activates or derepresses genes encoding for specific naturally occurring molecules such as proteins or neurotrophic factors and induces the endogenous production of such naturally occurring compounds through the administration of carbon monoxide dependent guanylyl cyclase modulating purine derivatives. The methods of the present invention may be used to affect a variety of cellular and neurological functions and activities and to therapeutically or prophylactically treat a wide variety of neurodegenerative, neurological, cellular, and physiological disorders.

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